

REMARKS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-19 are currently pending. Claims 1, 14, and 17 have been amended by the present amendment. The changes to the claims are supported by the originally filed specification and do not add new matter.

In the outstanding Office Action, Claims 1-12, 15, and 17-19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,657,362 to Giger et al. (hereinafter “the ‘362 patent”) in view of U.S. Patent No. 6,253,210 to Smith et al. (hereinafter “the ‘210 patent”); Claims 13, 16, 18, and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the ‘362 and ‘210 patents, further in view of U.S. Patent No. 6,282,305 to Huo et al. (hereinafter “the ‘305 patent”); and Claims 14, 18, and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the ‘362, ‘210, and ‘305 patents, further in view of U.S. Patent No. 6,898,303 to Armato, III et al. (hereinafter “the ‘303 patent”).

Amended Claim 1 is directed to a method of processing medical images to determine a prognosis of recovery, comprising: (1) obtaining segmented image data of a portion of the medical image data corresponding to an abnormality, (2) extracting at least one abnormality feature from the segmented image data corresponding to the abnormality; and (3) determining the prognosis on recovery based on the extracted at least one abnormality feature. Further, Claim 1 has been amended to clarify that the prognosis of recovery includes an indication of

the likelihood of survival of a subject. The changes to Claim 1 are supported by the originally filed specification and do not add new matter.²

Applicants respectfully submit that the rejection of Claim 1 is rendered moot by the present amendment to that claim.

Regarding the rejection of Claim 1 under 35 U.S.C. § 103, the Office Action asserts that the '362 patent discloses everything in Claim 1 with the exception of "determining the prognosis based on the abnormality," and relies on the '210 patent to remedy that deficiency.³

The '362 patent is directed to a method for enhancing visualization of a mammographic image including the steps of identifying in the image an anatomically dense portion of the image and processing the dense portion to produce a processed image having a more uniform density. As shown in Figure 1, the '362 patent discloses that the method includes the step of digitizing a mammogram, segmenting the border of the breast region, and performing a histogram analysis within a region of interest to ultimately determine the percentage of dense portions. However, as admitted in the outstanding Office Action, the '362 patent fails to disclose the step of determining the prognosis of recovery based on the extracted at least one abnormality feature. Accordingly, it follows that the '362 patent does not disclose that the prognosis of recovery includes an indication of the likelihood of survival of a subject, as recited in amended Claim 1.

The Smith et al. patent is directed to a method for automatically presenting an operator with composite data containing co-registered data and subject data. See Figure 2 of the '210 patent. In particular, the '210 patent discloses a plurality of co-registered databases that may be distributed amongst several databases accessible through a local area computer network or a wide area computer network. Further, the '210 patent discloses that, when planning or providing medical treatment, the '210 system produces composite data linking

² See, e.g., step 106 in Figure 1 and the discussion related thereto in the specification on page 13.

³ See page 2 of the outstanding Office Action.

co-registered data of a generic model to the specific anatomy of a patient receiving treatment.⁴ The '210 patent discloses that the composite data for medical diagnosis could include diagnostic radiology data, radiation treatment planning data, and neurosurgical targeting data.⁵ Regarding radiation treatment planning, the '210 patent discloses that three-dimensional segmented atlases are mapped to patient data to produce an object-based model of lesions, targets, and major organs and other critical structures. The patient data with associated object information is utilized by a treatment planning program for computing optimized radiation delivery strategies from target and critical structure information."⁶

However, Applicants respectfully submit that the '210 patent fails to disclose determining the prognosis on recovery based on an extracted at least one abnormality feature, wherein the prognosis of recovery includes an indication of the likelihood of survival of a subject. The '210 patent is silent regarding determining an indication of the likelihood of survival for a subject based on an extracted at least one abnormality feature. Rather, the '210 patent merely discloses that radiation treatment planning can be performed based on patient data. Accordingly, Applicants respectfully submit that amended Claim 1 (and all similarly rejected dependent claims) patentably define over any proper combination of the '362 and '210 patents.

Independent Claim 17 recites limitations analogous to the limitations recited in Claim 1. Moreover, Claim 17 has been amended in a manner analogous to the amendment to Claim 1. Accordingly, for reasons analogous to the reasons stated above for the patentability of Claim 1, Applicants respectfully submit that the rejection of Claim 17 is rendered moot by the present amendment to that claim.

Regarding the rejection of dependent Claims 13, 14, 16, 18, and 19 under 35 U.S.C. § 103(a), Applicants respectfully submit that the '305 and '303 patents fail to remedy the

⁴ See columns 8 and 9 of the '210 patent.

⁵ See the '210 patent, column 9.

⁶ '210 patent, column 9, lines 18-25.

deficiencies of the '362 and '210 patents, as discussed above. Accordingly, Applicants respectfully submit that the rejection of Claims 13, 14, 16, 18, and 19 are rendered moot by the present amendment to the independent claims.

Moreover, Applicants note that the present application and the '303 patent were, at the time the invention of the present application was made, owned by the University of Chicago.⁷ See Statement of Common Ownership. Moreover, Applicants note that, since the present application was filed July 14, 2003, prior to the reference date of the '303 patent, the '303 patent qualifies as prior art only under 35 U.S.C. § 102(e). Accordingly, under 35 U.S.C. § 103(c), the '303 patent cannot be used in a rejection under 35 U.S.C. § 103(a) against the claims of the present application. See M.P.E.P. § 706.02(l)(2). Accordingly, Applicants request that the rejection of Claims 14, 18, and 19 as being unpatentable over the '303, '305, '210, and '362 patents be withdrawn.

Thus, it is respectfully submitted that independent Claims 1 and 17 (and all associated dependent claims) patentably define over any proper combination of the '362, '210, '305, and '303 patents.

⁷ The Arch Development Corporation was wholly owned by the University of Chicago at the time the invention of the present application was made.

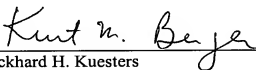
Consequently, in view of the present amendment and in light of the above discussion, the outstanding grounds for rejection are believed to have been overcome. The application as amended herewith is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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